General

Guideline Title

Guideline for primary care management of headache in adults.

Bibliographic Source(s)

Toward Optimized Practice. Guideline for primary care management of headache in adults. Edmonton (AB): Toward Optimized Practice; 2012 Jul. 71 p. [28 references]

Guideline Status

This is the current release of the guideline.

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- August 31, 2016 – Opioid pain and cough medicines combined with benzodiazepines : A U.S. Food and Drug Administration (FDA) review has found that the growing combined used of opioid medicines with benzodiazepines or other drugs that depress the central nervous system (CNS) has resulted in serious side effects, including slowed or difficult breathing and deaths. FDA is adding Boxed Warnings to the drug labeling of prescription opioid pain and prescription opioid cough medicines and benzodiazepines.
- March 22, 2016 – Opioid pain medicines : The U.S. Food and Drug Administration (FDA) is warning about several safety issues with the entire class of opioid pain medicines. These safety risks are potentially harmful interactions with numerous other medications, problems with the adrenal glands, and decreased sex hormone levels. They are requiring changes to the labels of all opioid drugs to warn about these risks.

Recommendations

Major Recommendations

The criteria used to determine the categorization of the recommendations (Do, Do Not Do, and Do Not Know) are defined at the end of the "Major Recommendations" field. In addition, an explanation of the evidence source (i.e., types of evidence and corresponding "seed" guidelines) is also available.

The Guideline Development Group (GDG) considered the balance of benefits and harms for the interventions listed in the Alberta Guideline. Italicized statements relating to harm are included in the recommendations, where appropriate. These statements were sourced from the recommendations or elsewhere in the "seed" guidelines, or were created by the GDG.

Headache Diagnosis and Investigation

	Recommendation	Evidence Source
Approach to Headache Diagnosis		
Do	Headache History For the patient presenting with headache for the first time or with a significant change in headache pattern, the headache history should include information on the following: 1. Headache onset (thunderclap, association with head or neck trauma), previous attacks (progression of symptoms), duration of attacks (under 3 hours, over 4 hours, continuous), and days per month or week with headache 2. Pain location (unilateral, bilateral, frontal, periorbital, occipital; associated neck pain) 3. Headache associated symptoms (nausea, vomiting, photophobia, phonophobia, conjunctival injection, or rhinorrhea) 4. Relationship of headache to possible precipitating factors (stress, posture, cough, exertion, straining, neck movement, jaw pain, etc.) 5. Headache severity and effect of the headaches on work and family activities 6. Acute and preventive medications tried in the past, and response to these medications and side effects 7. Presence of co-existent conditions that may influence treatment choice (insomnia, depression, anxiety, hypertension, asthma, and history of heart disease or stroke) Refer to Appendix B: Headache History Guide in the original guideline document.	**EO (GDG)**
Do	Physical Examination Patients presenting to a healthcare provider for the first time with headache, or with a headache that differs from their usual headache, should have a physical examination that includes the following: 1) a screening neurological examination; 2) a neck examination; 3) a blood pressure measurement; 4) a focused neurological examination, if indicated; and 5) an examination for temporomandibular disorders, if indicated.	**CS (G4)**
Do	Screening Neurological Examination The screening neurological examination should consist of the following: 1. General assessment of mental status 2. Cranial nerve examination: fundoscopy, examination of pupils for symmetry and reaction to light, eye movements, visual field examination, and evaluation of facial movement for asymmetry and weakness 3. Assessment of all four limbs for unilateral weakness, reflex asymmetry, and evaluation of coordination in the upper limbs 4. Assessment of gait, including heel-toe walking (tandem gait)	**EO (G4)**
Do	Neck Examination Physical examination of patients with headache should include an assessment of neck posture and range of motion, and palpation for muscle tender points.	**NRCS (G4)**
Do	Focused Neurological Examination A focused neurological examination should be added if indicated by patient symptoms and/or abnormal signs on the screening examination (e.g., dysarthria would lead to more detailed assessment of lower cranial nerves; reflex asymmetry would lead to assessment of plantar responses).	**EO (GDG)**
Do	Examination for Temporomandibular Disorders In the patient with headache and associated jaw complaints, the physical examination should include clinical assessment of jaw movements and palpation of the muscles of mastication for tender points.	**EO (GDG)**

Clinical Diagnosis	Recommendation	Evidence Source
Primary Headaches		
Do	Patients with recurrent headache attacks and a normal neurological examination (other clinical symptoms may need to be considered as well, in some patients):	
	A. Diagnose migraine without aura (migraine with aura if an aura is present) if they have at least two of: 1) nausea during the attack, 2) light sensitivity during the attack; 3) some of the attacks interfere with their activities. Refer to "Management of Migraine Headache," below.	**NRCS (G4)**
	B. Diagnose episodic tension-type headache if headache attacks are not associated with nausea, and have at least two of the following: 1) bilateral headache; 2) non-pulsating pain; 3) mild to moderate intensity; and 4) headache is not worsened by activity. Refer to "Management of Tension-Type Headache," below.	**CS (G4)**
	C. Diagnose cluster headache or another trigeminal autonomic cephalalgia if headache attacks fit all the following: 1) frequent; 2) severe; 3) brief (duration of less than 3 hours); 4) unilateral; and 5) ipsilateral conjunctival injection and/or tearing and/or restlessness during the attacks (ipsilateral ptosis and/or miosis may be present on examination). Refer to "Management of Cluster Headache," below; neurologist referral recommended.	**CS (G4)**
Do	Patients with headache on 15 or more days per month for more than 3 months and with a normal neurological examination:	
	A. Diagnose chronic migraine if their headaches meet migraine diagnostic criteria (above) or are quickly aborted by migraine specific medications (triptans or ergots) on 8 days a month or more.	**EO (GDG)**
	> i. Chronic migraine with medication overuse if the patient uses ergots, triptans, opioids, or combination analgesics on 10 days a month or more; or uses plain acetaminophen or non-steroidal anti-inflammatory drugs (NSAIDs) on 15 days a month or more. Refer to "Management of Medication Overuse Headache," below.	**EO (GDG)**
	> ii. Chronic migraine without medication overuse if patients do not have medication overuse as defined above. Refer to "Management of Migraine Headache," below.	EO (GDG)
	B. Diagnose chronic tension-type headache if their headaches meet episodic tension-type headache diagnostic criteria (above), except mild nausea may be present. Refer to "Management of Tension-type Headache," below.	**EO (GDG)**
Do	Although chronic migraine and chronic tension-type headache may result in continuous headache in some patients, two other less common headache syndromes should be considered in patients with continuous headache. Patients with continuous daily headache for more than 3 months with a normal neurological examination:	
	A. Diagnose hemicrania continua if the headache: 1) is strictly unilateral; 2) is always on the same side of the head (ptosis and/or miosis may be present on examination); and 3) responds dramatically to indomethacin. Refer to "Other Headache Disorders," below (neurologist referral recommended).	**EO (GDG)**
	B. Diagnose new daily persistent headache if the headache is unremitting since its onset. It is important to consider secondary headaches in these patients. Neurologist referral recommended.	**EO (G4)**
Secondary Headaches		
Do	Cervicogenic headache should be considered in patients with neck pain and occipital head pain, with or without pain radiation to other head regions (or face), when pain is precipitated or aggravated by neck movements or sustained neck postures and there are abnormalities on examination of the neck (abnormal movement, muscle tone, or muscle tenderness). If the headache occurs after neck trauma and persists for more than 3 months, the term "chronic headache attributed to whiplash injury" should be used. Caution: Patients with migraine often complain of neck discomfort during a headache and may have muscular tender points. These appear to be secondary to the migraine pain, and do not necessarily indicate a neck disorder as cause of the headache.	**EO (GDG)**
Do	Post-traumatic headache should be diagnosed when a new headache disorder begins within 7 days of a head injury. These may occur even after a mild head injury. If the headache persists for more than 3 months, it is termed a	**EO (GDG)**

	Recommendation	Evidence Source
	chronic post-traumatic headache.	
Do	Temporomandibular disorder should be considered in patients with headache and/or facial pain who have painful jaw clicking, jaw locking, tenderness of muscles of mastication, tenderness of the temporomandibular joints, or limitation of mandibular movement.	**EO (GDG)**
Diagnosis and Neuroimaging in the Emergent/Urgent Setting		
Do	Emergency Red Flags: (need to be addressed immediately)	
	1. Thunderclap headache: Onset of severe headache that is sudden (seconds to 1 minute from onset to peak intensity).	**EO (GDG)**
	> Patients presenting with severe headache of sudden onset (thunderclap headache) should be sent to an emergency department with urgent computerized tomography (CT) capability for immediate investigation to exclude subarachnoid hemorrhage. If subarachnoid hemorrhage is not present on head CT scanning, other investigations (e.g., lumbar puncture) may be necessary. Specialist involvement and further neuroimaging may also be necessary, as the differential diagnosis for thunderclap headache includes arterial dissection, dural sinus thrombosis, pituitary apoplexy, and reversible cerebral vasoconstriction syndrome.	**CS (G4)**
	2. Headache with fever and neck stiffness (meningismus): Patients with suspected bacterial meningitis should be sent immediately to an emergency department with urgent CT and lumbar puncture capability for investigation and treatment. Antibiotic therapy should not be unduly delayed by these investigations.	**CS (G4)**
	3. Papilloedema in a patient with altered level of consciousness and/or focal signs: Patients with papilloedema and altered level of consciousness and/or focal neurological signs may have a space-occupying lesion and may be at risk for incipient transtentorial herniation. They should be sent immediately to an emergency department with neuroimaging capability and specialist resources for investigation and treatment.	**NRCS (G4)**
	4. Acute angle-closure glaucoma: Patients with head pain and signs and symptoms of acute angle-closure glaucoma (non-reactive mid-dilated pupil, acutely inflamed eye, and visual disturbance with pain and nausea) should be sent immediately for assessment by an ophthalmologist or to an emergency department with the capability to measure intraocular pressure and initiate treatment.	**CS (G4)**
Do	Urgent Red Flags (need investigation and referral within hours to days)	
	1. Signs of systemic illness in the patient with new onset headache: Patients with new onset headache or a major change in headache pattern and a systemic illness (cancer, human immunodeficiency virus [HIV], etc.) that may indicate a serious cause for the headache may require urgent specialist consultation and/or investigation.	**G (G4)**
	2. New headache in patients over 50 years of age with other symptoms suggestive of temporal arteritis: Patients over 50 years of age with new onset headache and other symptoms of temporal arteritis (jaw claudication, transient visual loss, etc.) should receive urgent investigation (erythrocyte sedimentation rate [ESR], C-reactive protein [CRP], and if indicated, temporal artery biopsy), and may require specialist consultation and early systemic corticosteroid treatment.	**NR (G4)**
	3. Papilloedema in an alert patient without focal neurological signs: Patients with papilloedema, a normal level of consciousness, and no focal neurological signs may have benign intracranial hypertension (pseudotumour cerebri). They should have urgent specialist referral and will need urgent neuroimaging. An intracranial space-occupying lesion should be ruled out prior to lumbar puncture to measure cerebrospinal fluid (CSF) pressure. Further investigation may be required as the differential diagnosis would include cerebral venous sinus thrombosis.	**EO (GDG)**
	4. Elderly patient with new headache and subacute cognitive change: Elderly patients with a new headache and a recent subacute (days to weeks) decline in cognition may have a subacute or chronic subdural hematoma. A history of head injury is not always present. They require urgent specialist referral and/or brain CT imaging.	**EO (GDG)**
Neuroimaging and Diagnosis in the Outpatient Setting		
Do Not Do	Imaging in Typical Migraine	

	Recommendation	Evidence Source
	As the diagnostic yield of neuroimaging in patients with typical recurrent migraine attacks is very low, neuroimaging is not indicated in patients with recurrent headaches with the clinical features of migraine, a normal neurological examination, and no red flags for potential causes of secondary headache.	CS (G4) + qSR (IHE Database)
	Sinus x-rays and cervical spine x-rays are not recommended for the routine evaluation of the patient with migraine.	EO (G3)
Do	Atypical Headaches and Changes in Headache Pattern Patients with headaches that do not fit the typical pattern of migraine or tension-type headache, and patients with a major change in headache pattern should be considered for specialist consultation and/or neuroimaging, depending on the clinical judgement of the practitioner. A non-contrast brain CT scan is usually sufficient to rule out a space-occupying lesion as a cause of headache.	EO (G1)
Do	Unexplained Focal Signs in the Patient with Headache	
	Patients with unexplained focal neurological signs and recurrent headache require specialist referral and/or neuroimaging to exclude a space-occupying central nervous system (CNS) lesion.	CS (G4) + qSR (IHE Database)
	In the non-urgent setting, brain magnetic resonance imaging (MRI) is the neuroimaging procedure of choice, but a non-contrast brain CT is usually adequate to exclude a space-occupying lesion as a cause of headache.	G (G4)
Do	Unusual Headache Precipitants	
	Patients with headache clearly precipitated by exertion, cough, or valsalva should be considered for specialist referral and/or a brain MRI scan to exclude a Chiari 1 malformation or a posterior fossa lesion (but it must also be considered that patients with typical migraine may have exertion as one of their headache triggers).	CS (G4) + qSR (IHE Database)
	Patients in whom postural change has a major effect on headache intensity need specialist consultation and will require investigation.	CS (G4)
	For headache that worsens on standing, brain MRI scanning with gadolinium enhancement may be needed to look for indirect evidence of a CSF leak (dural enhancement, etc.).	EO (GDG)
	For headache that worsens on lying down, a brain CT or MRI scan can be used to exclude a space-occupying lesion. As the differential diagnosis includes cerebral venous sinus thrombosis, additional investigation may be required.	EO (GDG)
Do	Unusual Aura Symptoms For patients with unusual aura symptoms, consider referral to a neurologist for diagnosis and possible investigation.	EO (GDG)
Do	Cluster Headache and Other Uncommon Primary Headache Syndromes In patients with new onset cluster headache or another trigeminal autonomic cephalalgia, hemicrania continua, or new daily persistent headache, specialist referral should be considered for treatment and investigation.	CS (G4) + qSR (IHE Database)
Do	Late Onset Headache For patients with headache that begins after the age of 50 years and who have no other red flags, consider non-contrast brain CT scan for space-occupying lesion and/or complete blood count (CBC), ESR, and CRP to investigate for giant cell (temporal) arteritis.	NR (G4)
Do Not Do	Neuroimaging for Patient Reassurance Clinicians considering neuroimaging primarily for patient reassurance in patients with headache should consider whether this is in the best interest of the patient, and a prudent use of resources, or whether other means of reassurance (i.e., careful explanation of the circumstances, patient education, or specialist referral) would be more advisable. Clinicians requesting neuroimaging should be aware that any imaging study, particularly MRI, can identify incidental findings which may or may not correlate with clinical findings, and which may cause unnecessary patient anxiety.	RCT (G4)

	Recommendation	Evidence Source
Do Not Do	Electroencephalography (EEG) An EEG is not recommended for the routine evaluation of patients with headache.	**EO (G1, G3)**

Management of Migraine Headache

	Recommendations	Evidence Source
General Approach to Management		
Do	Headache Diaries Consider encouraging patients to keep a headache diary to monitor headache frequency, intensity, triggering factors, and medication use. Refer to patient handout, Headache Diary Sheet.	**EO (G3)**
Do	Additional Assessment of Disability The degree of migraine-related disability present should be assessed clinically. Practitioners may find formal disability scales helpful in selected patients. Headache Impact Test (HIT-6), and the Migraine Disability Assessment Scale (MIDAS).	**NRCS (G4)**
Do	Psychiatric Comorbidities Assessment of patients with migraine should include a clinical evaluation for the presence of significant depression and/or anxiety. If present, these should be treated according to evidence-based mental health recommendations.	**NRCS (G3)**
Lifestyle and Migraine Trigger Management		
Do	Lifestyle Factors Patients should be advised to adjust their lifestyle to avoid exacerbating their migraine (e.g., avoid missing meals; avoid dehydration; maintain adequate, regular sleep). A general exercise program should be considered part of comprehensive migraine management.	**EO (GDG)**
Do	Specific Migraine Triggers Patients should be advised to consider whether some of the commonly reported migraine triggers, including food triggers, are important for them. A headache diary is helpful in this assessment. Refer to patient handouts: Headache Diary Sheet and Commonly Reported Food Triggers for Migraine Attacks.	**EO (GDG)**
Acute Pharmacological Therapy		
Do	Assessment of the Need to Change a Patient's Acute Migraine Medication Patients should be specifically assessed at follow-up visits to determine if their acute migraine medications need to be changed.	**EO (GDG)**
Do	Early Treatment of Migraine Attacks Advise patients to take their medication early in their migraine attack, where possible, to improve effectiveness. The strategy may not be appropriate for patients with frequent attacks who are at risk for medication overuse headache (see medication overuse recommendation). For patients with migraine with aura, it is usually advisable to take acute medication just as the headache phase is starting, rather than during the aura, although taking oral medication during the aura appears effective for many patients.	**EO (GDG)**
Do	Rescue Medication For severe migraine attacks, consider providing an additional rescue medication if the patient's usual acute medication does not work consistently for every attack.	**EO (GDG)**

Acute Medications	Recommendations	Evidence
Do	NSAIDs and Acetaminophen	**RCT (G4) Source + SR (IHE Database)**
	Acetylsalicylic acid 1000 mg, ibuprofen 400 mg, and naproxen sodium 500 to 550 mg are recommended for acute treatment in patients with migraine of all severities. Acetaminophen 1000 mg is recommended for acute treatment of migraine attacks of mild to moderate severity. Daily dosage should not exceed 4 grams per day to avoid liver dysfunction. If NSAIDs and/or acetaminophen are not effective by history or after a brief treatment trial, alternative medications (e.g., a triptan) should be tried.	
	NSAIDs can cause gastric irritation and bleeding and renal dysfunction.	
Do	Triptans	
	Oral triptans are recommended for acute treatment for all severities of migraine if previous attacks have not been controlled by simple analgesics. If a patient does not respond well to one triptan, a different triptan should be offered.	**SR (G3, G4)**
	Patients with recurrence of their migraine attack after initial relief from a triptan should be advised to take a second dose (within recommended dosage limits), as this is usually an effective strategy.	**RCT (G2)**
	Nasal zolmitriptan 5 mg and nasal sumatriptan 20 mg are recommended for acute treatment for all severities of migraine if previous attacks have not been controlled by simple analgesics. They may be helpful in patients with nausea and where oral triptans have been ineffective.	**SR (G2)**
	Subcutaneous sumatriptan 6 mg should be considered for patients with severe migraine, including those in whom other triptan formulations have been ineffective. It can be particularly helpful where vomiting precludes effective use of the oral route.	**SR (G2)**
	Triptans are vasoconstrictors and should be avoided in patients with cardiovascular disease.	
Do	Triptan and NSAID Combinations In patients with an inadequate response to triptans alone, a combination of sumatriptan 50 mg to 100 mg and naproxen sodium 500 to 550 mg may be more effective. This approach may be particularly helpful for patients with prolonged attacks and/or headache recurrence. Although demonstrated only for the sumatriptan-naproxen combination, it might be expected that combinations of naproxen sodium 500 to 550 mg (or other NSAIDs) with other triptans in the usual doses would also be helpful.	**RCT (G4)**
Do	Antiemetics	
	Metoclopramide (10 mg up to 4 times per day orally) and domperidone (10 mg up to 3 times per day) are recommended to treat nausea and potential emesis in migraine. These drugs may improve the absorption of analgesics. *Domperidone has fewer side effects than metoclopramide.*	**RCT (G2)**
	Intravenous metoclopramide (10 mg) can be used in the acute treatment of patients with migraine. *Side effects include akathisia and dystonia.*	**SR (G4)**
Do	Dihydroergotamine (DHE) DHE by nasal spray or subcutaneous/intramuscular injection may be considered for patients who do not respond well to triptans.	**RCT (G1, G3)**
Do Not Do	Ergotamine Ergotamine is not recommended for routine use in patients with acute migraine, although it may be helpful for selected patients where triptans are not an option.	**SR (G4)**

	Recommendations	Evidence Source
	Because it is a vasoconstrictor, it should not be recommended for patients with cerebrovascular or cardiovascular disease.	
Do Not Do	Opioids	
	Opioid analgesics and combination analgesics containing opioids (e.g., codeine) are not recommended for routine use for the treatment of migraine owing to their potential for causing medication overuse headache.	**CS (G4)**
	Opioids may be necessary when other medications are contraindicated or ineffective, or as a rescue medication when the patient's usual medication has failed.	**EO (GDG)**
	For more information on the use of opioids for chronic non-cancer pain, consult the National Opioid Use Guideline Group's Canadian guideline for safe and effective use of opioids for chronic non-cancer pain (guideline endorsed by the College of Physicians and Surgeons of Alberta).	
Do Not Do	Butalbital The use of butalbital-containing combination analgesics in migraine management should be avoided and limited to exceptional circumstances where other acute medications are contraindicated and/or ineffective. When used, they should be carefully monitored to avoid medication overuse (use on less than 10 days per month) and dependence.	**RCT (G1)**
Pharmacological Prophylactic Therapy		
Do	Indications for Migraine Preventive Medication Consider migraine pharmacological prophylactic therapy in the following situations: 1. Recurrent migraine attacks are causing significant disability despite optimal acute drug therapy. 2. The frequency of acute medication use is approaching levels that place the patient at risk for medication overuse headache: • Use of acute medication on 10 days a month or more for triptans, ergotamines, opioids, and combination analgesics • Use of acute medications on 15 days a month or more for acetaminophen and NSAIDs 3. Recurrent attacks with prolonged aura are occurring (hemiplegic migraine, basilar-type migraine, etc.). 4. Contraindications to acute migraine medications are making symptomatic treatment of individual migraine attacks.	**EO (GDG)**
Goals for Migraine Prophylactic Therapy		
Do	Choosing a Specific Migraine Preventive Medication A preventive medication should be chosen based on the following: 1. Evidence for efficacy 2. Side effect profile and contraindications 3. Co-existent medical and psychiatric disorders: • The number of medications required can be minimized by using migraine preventive drugs which can also treat other disorders that may co-exist with migraine (e.g., anxiety, depression, hypertension, insomnia). • Some migraine preventive drugs are contraindicated by co-existent disorders (e.g., flunarizine in depression).	**EO (GDG)**
Do	Prescribing a Migraine Preventive Medication 1. Educate patients on the need to take the medication daily and according to the prescribed frequency and dosage. 2. Ensure that patients have realistic expectations as to what the likely benefits of pharmacological prophylaxis will be. That is: • Headache attacks will likely not be abolished completely. • A reduction in headache frequency of 50% is usually considered worthwhile and successful. • It may take 4 to 8 weeks for significant benefit to occur. • If the prophylactic drug provides significant benefit in the first 2 months of therapy, this may increase further over several additional months of therapy. 3. Evaluate the effectiveness of therapy through the use of patient diaries that record headache frequency, drug	**EO (G3, G4)**

	Recommendations	Evidence Source
	use, and disability levels. 4. For most prophylactic drugs, initiate therapy with a low dose and increase the dosage gradually to minimize side effects. 5. Increase the dose until the drug proves effective, until dose-limiting side effects occur, or a target dose is reached. 6. Provide an adequate drug trial. Unless side effects mandate discontinuation, continue the prophylactic drug for at least 6 to 8 weeks after dose titration is completed. 7. Because migraine attack tendency fluctuates over time, gradual discontinuation of the drug should be considered for many patients after 6 to 12 months of successful prophylactic therapy, but preventive medications can be continued for much longer in patients who have experienced significant migraine-related disability.	
Medications for Migraine Prophylaxis		
Do	Beta-Blockers The following beta-blockers are recommended for migraine prophylaxis:	
	• Propranolol 80 mg to 240 mg daily	**SR (G2,G4)**
	• Nadolol 80 mg to 160 mg daily	**RCT (G1)**
	• Metoprolol 100 mg to 200 mg daily	**RCT (G1, G2)**
	Beta-blockers may be helpful in patients with comorbid anxiety.	**G (G4)**
	Side effects of beta-blockers include fatigue and hypotension. They should be avoided or used with caution in patients with asthma, diabetes, bradycardia, and peripheral vascular disease.	
Do	Antidepressants	
	Amitriptyline is recommended for migraine prophylaxis: • Dosage range 10 mg to 100 mg daily.	**RCT (G1, G2, G4)**
	• To assist with tolerability, it should be started at a low dose (10 mg daily is recommended) with the dose being built up slowly (10 mg per week is recommended). The total daily dose is usually given at bedtime or an hour or two before bedtime.	**EO (GDG)**
	• May be preferred in patients with migraine and depression, tension-type headache, insomnia, or anxiety. • It is contraindicated in patients with angle-closure glaucoma. *Common side effects are dry mouth and sedation.*	**G (G4)**
	Venlafaxine 75 mg to 150 mg daily is an alternative to amitriptyline for migraine prophylaxis, although evidence for its efficacy is limited.	**RCT (G2, G4)**
	Nortriptyline can be considered for migraine prophylaxis. The dosage is similar to that of amitriptyline.	**EO (G1)**
Do Not Do	Selective serotonin reuptake inhibitors are not recommended in the prophylaxis of migraine.	**SR (G4)**
Do	Antiepileptics	
	Topiramate 50 mg to 200 mg daily (usual target dose 100 mg daily) is recommended for migraine prophylaxis.	**SR (G4)**
	• May be preferred in patients with obesity.	**SR (G4)**
	• Should be started at a low daily dosage (25 mg), and the daily dosage should be increased slowly (25 mg	**EO**

	Recommendations	Evidence Source
	each week or every two weeks).	(GDG)
	• *Can result in a number of side effects including paresthesias, cognitive problems, word finding difficulty, and weight loss.* • *Should be avoided in pregnant patients or those with angle-closure glaucoma.* • *Should be avoided or used with caution in patients with a history of renal calculi.*	**EO (GDG)**
	Divalproex sodium 750 mg to 1500 mg daily is recommended for migraine prophylaxis.	**SR (G4)**
	• May be preferred in patients with comorbid depression.	**G (G4)**
	• *Should be avoided in women who are pregnant or of child bearing potential and patients with liver disease.*	**G (G4)**
	• *Can result in a number of side effects including hair loss, tremor, and weight gain.* • *Is associated with serious fetal malformations (neural tube defects).*	**RCT (G1)**
	Gabapentin (900 to 2400 mg daily) is recommended for migraine prophylaxis.	**RCT (G4)**
Do	Vitamins, Minerals and Herbals The following vitamins, minerals, and herbal compounds are recommended for migraine prophylaxis. They may have lower efficacy than drug prophylactics (expert opinion), but all have minimal side effects:	
	• Butterbur (Petasites hybridus) 75 mg twice a day	**RCT (G2)**
	• Riboflavin 400 mg daily	**RCT (G1, G2)**
	• Magnesium citrate 300 mg twice a day	**RCT (G1)**
	• Co-enzyme Q10 100 mg three times a day	**RCT (G2)**
Do Not Do	Feverfew is not recommended for migraine prophylaxis.	**SR (G4)**
Do	Other Medications	
	Candesartan 8 mg daily for one week, then 16 mg daily is recommended for migraine prophylaxis. It has few side effects, but experience with this drug in migraine prophylaxis is limited.	**RCT (G2)**
	Pizotifen 1.5 mg to 4 mg daily is recommended for migraine prophylaxis. *Side effects are common and include somnolence and weight gain.*	**RCT (G1)**
	Flunarizine 10 mg at bedtime is recommended for migraine prophylaxis. It should not be used in patients with a history of depression. *Side effects are common and include weight gain and depression.*	**RCT (G1, G2)**
	OnabotulinumtoxinA (botulinum toxin A) 155 to 195 Units injected as per protocol every 3 months by clinicians experienced in its use for headache is recommended for prophylaxis of chronic migraine only (migraine with headache on more than 14 days a month).	**EO (GDG)**
Do Not Do	NSAIDs are not recommended for migraine prophylaxis.	**EO (GDG)**
Do Not Know	There is insufficient evidence to recommend for or against the use of verapamil for migraine prophylaxis.	**EO (GDG)**

Non-Pharmacological Therapy	Recommendations	Evidence Source
Do	Relaxation Training, Biofeedback, and Cognitive Behavioural Therapy (CBT)	**SR (G5, IHE Database)**
	Psychological therapies, including relaxation training, biofeedback, and CBT (alone or in combination), are treatment options for motivated patients with migraine. These therapies are considered to be effective components of stress management training. Specific recommendations regarding which of these therapies to use for specific patients cannot be made.	
Do	Acupuncture Acupuncture can be considered in the prophylactic treatment of patients with migraine. Treatment should consist of at least one to two sessions per week for several (2 or more) months, with each treatment lasting approximately 30 minutes.	**SR (G4, IHE Database)**
Do Not Do	Homeopathy Homeopathy is not recommended for migraine prophylaxis.	**RCT (G2)**
Do Not Know	Hyperbaric Oxygen There is insufficient evidence to recommend for or against hyperbaric oxygen for acute treatment of migraine attacks and migraine prophylaxis. Lack of availability and cost would make this therapy impractical for routine use.	**RCT (G1) + SR (IHE Database)**
Do Not Know	Normobaric Oxygen There is insufficient evidence to recommend for or against the use of 100% normobaric oxygen for acute migraine treatment.	**EO (GDG)**
Do Not Know	There is insufficient evidence to make a recommendation for or against the use of the following interventions for migraine management:	
	• Acrylic splints	**EO (G4)**
	• Hypnotherapy	**RCT (G1)**
	• Massage	**RCT (G4)**
	• Spinal manipulation	**SR (G4, IHE Database)**
	• Transcutaneous electrical nerve stimulation (TENS)	**SR (G4)**
Menstrual Migraine		
Do	Acute Medications The acute treatment of menstrual migraine attacks is similar to the acute treatment of non-menstrual migraine attacks. If patients do not respond to simple analgesics (acetaminophen, NSAIDs), a triptan should be used.	**RCT (G4) + SR (IHE Database)**
Do	Prophylactic Treatment For patients with refractory menstrual migraine headache, frovatriptan 2.5 mg twice a day can be considered, with frovatriptan administration starting 2 days before the anticipated onset of the menstrually associated migraine attack and continuing for a total of 6 days.	**RCT (G4) + SR (IHE Database)**
Migraine Treatment in Pregnancy		
Acute Medications		
Do Not	Drugs for migraine should be avoided during pregnancy where possible.	**EO (G4)**

	Recommendations	Evidence Source
Do	Ergot alkaloids should not be used during pregnancy.	**EO (G2)**
Do	When necessary, acetaminophen 1000 mg and metoclopramide 10 mg can be used for the treatment of migraine in pregnancy. As with any medication used during pregnancy, acetaminophen should be taken at the lowest effective dose for the shortest time necessary. The total daily dose should not exceed 4 grams.	**EO (G2, G4)**
	Where analgesia beyond acetaminophen is needed, acetaminophen - codeine combination analgesics can be used in pregnancy.	**EO (GDG)**
	Ibuprofen 400 mg can be used for acute migraine attacks during the second trimester of pregnancy. All NSAIDs, including ibuprofen, should be avoided in the third trimester of pregnancy.	**EO (G4)**
Do Not Know	The risks associated with the use of sumatriptan during pregnancy appear to be minimal, but there is insufficient evidence to make a recommendation for or against the use of sumatriptan in pregnancy. Sumatriptan should not be used routinely in pregnancy, but may be considered for use when other medications have failed and the benefits outweigh the risks. There is much less information or experience available regarding the safety of the other triptans during pregnancy.	**EO (G2, G4)**
Prophylactic Treatment		
Do Not Do	Preventive drugs for migraine should be avoided during pregnancy where possible.	**EO (GDG)**
Do	Preventive drugs for migraine should be gradually discontinued prior to the commencement of a planned pregnancy or should be stopped as soon as possible during an unplanned pregnancy.	**EO (GDG)**
	When it is necessary to continue migraine prophylaxis during pregnancy, obtaining specialist advice should be considered.	**EO (GDG)**

Management of Tension-Type Headache (TTH)

	Recommendation	Evidence Source
Acute Pharmacological Therapy		
Do	The following drugs are recommended for the acute treatment of TTH (use on 15 days a month or more should be avoided): • Ibuprofen (200 mg to 400 mg) • Acetylsalicylic acid (500 mg to 1000 mg) • Naproxen (275 mg to 500 or 550 mg) *NSAIDs: gastrointestinal side effects, including bleeding* • Acetaminophen (500 mg to 1000 mg oral) *Less risk of gastrointestinal side effects compared to NSAIDs* Combination analgesics containing caffeine are drugs of second choice. Combining caffeine with ibuprofen and acetaminophen increases efficacy, but possibly also the risk for developing medication overuse headache.	**RCT (G6)**
Do Not Do	The following drugs are not recommended for routine use in acute treatment of TTH:	
	• Muscle relaxants	**NR (G6)**
	• Opioids, including combination analgesics containing codeine	**CS (G6)**
	• Triptans	**RCT (G6)**
Pharmacological Prophylactic Therapy		

	Recommendation	Evidence Source
Do	Drug of first choice: • Amitriptyline (10 mg to 100 mg daily) *Side effects include dry mouth, drowsiness, dizziness, constipation, and weight gain.*	**SR (G4)**
	Drugs of second choice:	
	• Mirtazapine (30 mg daily) *Side effects include drowsiness and weight gain.*	**SR (G6)**
	• Venlafaxine (150 mg daily) *Side effects include vomiting, nausea, dizziness, and loss of libido.*	**RCT (G6)**
Do Not Do	OnabotulinumtoxinA (botulinum toxin A) is not recommended for prophylaxis of chronic TTH.	**RCT (G4)**
Non-Pharmacological Therapy		
Do	Cognitive Behavioural Therapy (CBT), Biofeedback, and Relaxation Training CBT, biofeedback, and relaxation training may be considered for patients with frequent TTH.	**EO (GDG)**
Do	Exercise A therapeutic exercise program, based on an assessment by an appropriately trained health professional, may be considered for patients with TTH.	**EO (GDG)**
Do	Physical Therapy and Acupuncture Physical therapy and acupuncture may be considered for patients with frequent TTH.	**SR (G6)**
Do Not Know	There is insufficient evidence to make a recommendation for or against the use of the following interventions for the treatment of patients with TTH:	
	• Hypnotherapy	**EO (GDG)**
	• Massage	**SR (G4)**
	• TENS	**SR (G4)**
TTH Treatment in Pregnancy		
Acute Medication		
Do Not Do	Drugs for TTH should be avoided during pregnancy where possible.	**EO (G4)**
Do	Acetaminophen in a dose of 500 mg to 1000 mg is the treatment of choice in pregnant patients with TTH when headache pain is sufficient to require analgesia. As with any medication used during pregnancy, acetaminophen should be taken at the lowest effective dose for the shortest time necessary. The total daily dose should not exceed 4 grams.	**EO (G4)**
	If acetaminophen provides insufficient analgesia, ibuprofen 400 mg can be used in the second trimester of pregnancy. All NSAIDs, including ibuprofen, should be avoided in the third trimester of pregnancy.	**EO (G4)**
Prophylactic Treatment		
Do Not Do	Preventive drugs for TTH should be avoided during pregnancy where possible.	**EO (GDG)**
Do	Preventive drugs for TTH should be gradually discontinued prior to the commencement of a planned pregnancy or	**EO**

	Recommendation	Evidence Source
	should be stopped as soon as possible during an unplanned pregnancy.	EO (GDG)
	Prophylactic treatment for TTH would only rarely be considered necessary in pregnancy. When necessary, obtaining specialist advice should be considered.	EO (GDG)

Management of Medication Overuse Headache

	Recommendation	Evidence Source
Prevention and General Approach to Management		
Do	Consider a diagnosis of medication overuse headache in patients with headache on 15 days a month or more, and assess the patient for possible medication overuse.	**EO (GDG)**
Do	When medication overuse headache is suspected, the patient should also be evaluated for the presence of the following:	**NRCS (G4)**
	• Psychiatric comorbidities (depression and anxiety); these may need to be considered in planning an overall treatment strategy. • Psychological and physical drug dependence	**NRCS (G4)**
	• Use of inappropriate coping strategies: Medication overuse behaviour may occur in some patients because they have a limited repertoire of other more adaptive and pro-active coping strategies. Rather than relying on medication as a main coping strategy, patients with suspected medication overuse may benefit from training and development of more adaptive self-management strategies (e.g., identification and management of controllable headache triggers, relaxation exercises, effective stress management skills, and activity pacing). Expanding their repertoire of adaptive coping strategies may facilitate reduction of medication use and ultimate improvement in headache.	**EO (GDG)**
Do	Headache diaries that record acute medication intake should be used by patients with frequent migraine or other headache types to monitor acute medication use. Careful monitoring of acute medication use by both the patient and the physician is important in the prevention of medication overuse headache. Refer to the Headache Diary Sheet .	**EO (G3)**
Do	Treatment Treatment plans for the patient with medication overuse headache should include: 1. Patient education with regard to medication overuse headache. Patients need to understand that: a. Acute medication overuse can increase headache frequency. b. When medication overuse is stopped, headache may worsen temporarily and patients may experience other withdrawal symptoms. c. Many patients will experience a long-term reduction in headache frequency after medication overuse is stopped. d. Prophylactic medications may become more effective. 2. Formulation of a plan for cessation of medication overuse 3. Provision of a prophylactic medication 4. A strategy for the treatment of remaining severe headache attacks with limitations on frequency of use (i.e., a triptan for patients with analgesic overuse, DHE for patients with triptan overuse, etc.) 5. Patient follow-up and support	**EO (GDG)**
Do	Headache Prophylaxis Pharmacological prophylaxis should be considered in patients with suspected medication overuse headache, with the prophylactic medication started prior to or during medication withdrawal. Many migraine prophylactics are used (beta-blockers, tricyclics, and others) but topiramate (with the drug titrated slowly to a target dose of 100 mg daily, see migraine prophylaxis section), and OnabotulinumtoxinA (100 to 200 Units injected at intervals of 3 months by clinicians experienced in its use for headache) have the best evidence for efficacy in the setting of chronic migraine with medication overuse.	**EO (GDG)**
Do	Stopping Medication Overuse	**EO**

	Recommendation	Evidence Source
	Withdrawal of the overused medication should be attempted in all patients with suspected medication overuse headache. For most motivated patients, treatment can be carried out in an outpatient setting. A headache diary should be used to ensure that medication withdrawal targets are being met. Refer to the Headache Diary Sheet .	(GDG)
	Abrupt withdrawal should be advised for patients with suspected medication overuse headache caused by simple analgesics (acetaminophen, NSAIDs) or triptans, although gradual withdrawal is also an option.	RCT (G4)
	Gradual withdrawal should be advised for patients with suspected medication overuse headache caused by opioids and opioid-containing analgesics.	NR (G4)

Management of Cluster Headache

	Recommendation	Evidence Source
Do	Referral Cluster headache is an uncommon condition and specialist advice should be considered early if the patient is not responding well to therapy or unusual medication doses are required.	EO (GDG)
Acute Pharmacological Therapy		
Do	Effective options for the acute treatment of cluster headache attacks are:	
	a. Subcutaneous sumatriptan 6 mg	RCT (G4, G5)
	b. Intranasal zolmitriptan 5 mg or sumatriptan 20 mg	RCT (G4, G5)
	c. 100% oxygen at a rate of 12 litres per minute for 15 minutes through a non-rebreathing mask. (Caution is recommended in patients with chronic obstructive pulmonary disease [COPD].)	NRCS (G5)
	d. Oral triptans (zolmitriptan 5 mg) have shown some benefit, but are generally less effective.	RCT (G5)
	For more information on triptan use (e.g., maximum daily dose, side effects, etc.) see migraine medications see Appendix A: Table A.1. Medications Used for Acute (Symptomatic) Treatment of Migraine in the original guideline document.	
Pharmacological Prophylactic Therapy		
Do	For prophylaxis of cluster headache:	
	• Verapamil 240 mg to 480 mg daily is recommended as the drug of first choice. Higher doses can be used if necessary, but when doses above 480 mg are used, electrocardiograms should be done with each dosage increase to monitor for prolonged PR interval and cardiac arrhythmias. *Possible side effects are bradycardia, ankle edema, constipation, gastrointestinal discomfort, gingival hyperplasia, and dull headache.*	RCT (G4,G5)
	• For patients with frequent cluster attacks (several per day), while verapamil prophylaxis is being established, prednisone (60 mg daily for five days, then reduced by 10 mg every 2 days until discontinued) can be given as a transitional therapy at the start of a cluster bout to stop it quickly.	EO (G4)
	• Lithium (target dose 900 mg to 1,200 mg daily) is a drug of second choice and is used if verapamil is ineffective or contraindicated. Blood levels should be monitored to avoid toxicity and to ensure an adequate dose. *The major side effects are thyroid dysfunction, tremor, and renal dysfunction.*	NRCS (G5)

	Recommendation	Evidence
	• Melatonin up to 10 mg daily may be useful in some patients.	RCT Source (G5)
	• Topiramate can be considered (target dose 100 to 200 mg daily, with a starting dose of 25 mg daily). *Side effects include cognitive disturbances, paresthesia, and weight loss.*	NRCS (G5)

Other Headache Disorders

	Recommendation	Evidence Source
Hemicrania Continua		
Do	Referral Patients with hemicrania continua require specialist referral.	**NR (G4)**
Do	Pharmacological Therapy Indomethacin (25 mg to 75 mg three times a day) will provide headache relief. *Long term use of indomethacin is often problematic because of side effects (gastric irritation and bleeding, and renal dysfunction).*	**NR (G4)**
Cervicogenic Headache		
Do	Referral If the headache history and examination of the neck indicates that neck problems may be playing a significant role in the patient's headache, referral to a musculoskeletal therapist or specialist should be considered.	**EO (GDG)**
Non-Pharmacological Therapy		
Do	Exercise Although there is insufficient evidence to recommend any specific exercise for the treatment of cervicogenic headache, a therapeutic exercise program based upon an assessment by an appropriately trained health professional may be considered.	**EO (GDG)**
Do	Cervical Spinal Manipulation Cervical spinal manipulation, defined as the application of high velocity, low amplitude manual thrusts to the spinal joints slightly beyond the passive range of joint motion, may be considered in the management of patients with cervicogenic headache.	**SR (G4, IHE Database)**
Do	Cervical Spine Mobilization Cervical spine mobilization, defined as the application of manual force to the spinal joints within the passive range of joint motion that does not involve a thrust, may be considered in the management of patients with cervicogenic headache.	**SR (G4, IHE Database)**
Headache Secondary to Temporomandibular Disorders		
Do	Referral For patients with headache and symptoms and signs of a temporomandibular disorder (TMD), referral to a therapist or specialist in TMD may be appropriate.	**EO (GDG)**
Non-Pharmacological Therapy		
Do	Exercise A therapeutic exercise program based upon an assessment by an appropriately trained health professional may be considered for patients with TMD.	**EO (GDG)**

	Recommendation	Evidence Source

Definitions:

Summary of Criteria to Determine the Categorization of Recommendations

Do	• The Guideline Development Group (GDG) accepted the original recommendation, which provided a prescriptive direction to perform the action or used the term "effective" to describe it. • The GDG supplemented a recommendation or created a new one, based on their collective professional opinion, and/or systematic reviews which supported the action.
Do Not Do	• The GDG accepted the original recommendation, which provided a prescriptive direction not to perform the action; used the term "ineffective" to describe it; or stated that the evidence does "not support" it. • The GDG supplemented a recommendation or created a new one, based on their collective professional opinion and/or systematic reviews, which did not support the action.
Do Not Know	• The GDG accepted the original recommendation, which did not recommend for or against the action or stated that there was "no evidence," "insufficient or conflicting evidence," or "no good evidence" to support its use. • The GDG supplemented a recommendation or created a new one, based on their collective professional opinion and/or systematic reviews, which was equivocal with respect to supporting the action.

Evidence Source

Recommendations are based on a review of six "seed" guidelines (referenced as G1 to G6; published between 2000 and 2010) and additional systematic reviews (Institute of Health Economics [IHE] Database), or were created by the GDG based on their collective professional opinion and an analysis of relevant evidence.

Evidence Source Legend

- SR: Systematic Review
- qSR: Quasi-Systematic Review
- RCT: Randomized Control Trial
- NRCS: Non-Randomized Comparative Study
- CS: Case Series Study
- G: Guideline
- NR: Narrative Review
- EO: Expert Opinion as cited by the seed guideline(s)
- EO (GDG): collective EO of the Ambassador GDG
- IHE: Institute of Health Economics

"Seed" Guidelines"

The guidelines are not presented in any specific order. G1, G2, etc., are randomly assigned and for the purpose of organization only.

G1 USA	Frishberg BM, Rosenberg JH, Matchar DB, McCrory DC, Pietrzak MP, et al. Evidence based guidelines in the primary care setting: neuroimaging in patients with non-acute headache. St Paul, MN: US Headache Consortium; 2000. Available from: http://tools.aan.com/professionals/practice/pdfs/gl0088.pdf (accessed July 3, 2012). Matchar DB, Young WB, Rosenberg JH, Pietrzak MP, Silberstein SD, et al. Evidence-based guidelines for migraine headache in the primary care setting: pharmacological management of acute attacks. St Paul, MN: US Headache Consortium; 2000. Available from: http://tools.aan.com/professionals/practice/pdfs/gl0087.pdf (accessed July 3, 2012). Ramadan NM, Silberstein SD, Freitag FG, Gilbert TT, Frishberg BM. Evidence-based guidelines for migraine headache in the primary care setting: pharmacological management for prevention of migraine. St Paul, MN: US Headache Consortium; 2000. Available from: ttp://tools.aan.com/professionals/practice/pdfs/gl0090.pdf (accessed July 3, 2012). Campbell JK, Penzien DB, Wall EM. Evidence-based guidelines for migraine headache: behavioral and physical treatments. St Paul, MN: US Headache Consortium; 2000. Available from: http://tools.aan.com/professionals/practice/pdfs/gl0089.pdf

	(accessed July 3, 2012).
G2 Europe	Evers S, Afra J, Frese A, Goadsby PJ, Linde M, May A, et al. EFNS guideline on the drug treatment of migraine - revised report of an EFNS task force. European Journal of Neurology 2009;16(9):968-81.
G3 France	Géraud G, Lantéri-Minet M, Lucas C, Valade D. French Society for the Study of Migraine Headache (SFEMC). French guidelines for the diagnosis and management of migraine in adults and children. Clinical Therapeutics 2004;26(8):1305-18.
G4 UK	Scottish Intercollegiate Guidelines Network (SIGN). Diagnosis and management of headache in adults. A national clinical guideline. SIGN Publication No. 107. Edinburgh: SIGN; 2008. Available from: http://www.sign.ac.uk/guidelines/fulltext/107/index.html (accessed July 3, 2012).
G5 Europe	May A, Leone M, Afra J, Linde M, Sandor PS, Evers S, et al. EFNS guidelines on the treatment of cluster headache and other trigeminal-autonomic cephalalgias. European Journal of Neurology 2006;13(10):1066-77.
G6 Europe	Bendtsen L, Evers S, Linde M, Mitsikostas DD, Sandrini G, Schoenen J. EFNS guideline on the treatment of tension-type headache - Report of an EFNS task force. European Journal of Neurology 2010;17(11):1318-25.

Clinical Algorithm(s)

An algorithm for management of headache in adults titled "Quick Reference Guide" is provided in Appendix B of the original guideline document.

Scope

Disease/Condition(s)

Headache, including:

- Migraine headache
- Tension-type headache
- Medication overuse headache
- Cluster headache
- Hemicrania continua
- Cervicogenic headache
- Headache secondary to temporomandibular disorders

Note: Although some advice is provided with regard to the diagnosis and investigation of secondary headache disorders, and the management of cervicogenic headache and temporomandibular disorder are discussed briefly, the guideline does not provide advice on the management of other secondary headache disorders.

Other Disease/Condition(s) Addressed

- Anxiety
- Depression
- Hypertension
- Insomnia

Guideline Category

Counseling

Diagnosis

Evaluation

Management

Prevention

Treatment

Clinical Specialty

Family Practice

Internal Medicine

Neurology

Obstetrics and Gynecology

Pharmacology

Physical Medicine and Rehabilitation

Preventive Medicine

Intended Users

Advanced Practice Nurses

Chiropractors

Health Care Providers

Nurses

Occupational Therapists

Patients

Pharmacists

Physical Therapists

Physician Assistants

Physicians

Psychologists/Non-physician Behavioral Health Clinicians

Guideline Objective(s)

- To help Alberta clinicians make evidence-informed decisions about the care of adult patients (aged 18 years or older) with headache
- To increase the use of evidence-informed approaches to the prevention, assessment, diagnosis, and treatment of headache for patients in primary care
- To promote appropriate specialist referrals and use of diagnostic tests in patients with headache
- To encourage patients to engage in appropriate self-care

Target Population

Adult patients aged 18 years or older with headache

Note:

This guideline does not provide recommendations for the management of patients with headache in the emergency department or inpatient setting beyond a discussion of "red flags" and some comments on the initial patient assessment. It is intended for primary care providers rather than for headache specialists.

This guideline does not provide advice on the diagnosis and management of headache in children and adolescents.

Interventions and Practices Considered

Note: Not all of the listed interventions/practices are recommended; please see the "Major Recommendations" field for full context.

Diagnosis/Evaluation

1. Headache history
2. Physical examination
    - Screening neurological examination
    - Neck examination
    - Focused neurological examination
    - Examination for temporomandibular disorders
3. Clinical diagnosis
    - Clinical diagnosis of primary headaches (migraine, episodic tension-type headache [TTH], cluster headache and other trigeminal autonomic cephalalgia, chronic migraine, chronic TTH, hemicrania continua, new daily persistent headache)
    - Clinical diagnosis of secondary headaches (cervicogenic headache, post-traumatic headache, temporomandibular disorder)
4. Diagnosis and neuroimaging in the emergent/urgent setting (emergency red flags, urgent red flags)
5. Neuroimaging and diagnosis in the outpatient setting
    - Neuroimaging in typical migraine
    - Atypical headaches and changes in headache pattern
    - Unexplained focal signs in the patient with headache
    - Unusual headache precipitants
    - Unusual aura symptoms
    - Cluster headache and other uncommon primary headache syndromes
    - Late onset headache
6. Neuroimaging for patient reassurance
7. Electroencephalography

Management/Treatment/Prevention of Migraine Headache

1. General approach to management
    - Headache diaries
    - Additional assessment of disability
    - Assessment of psychiatric co-morbidities
2. Lifestyle and migraine trigger management
3. Acute pharmacological therapy
    - Assessment of the need to change medication
    - Early treatment of migraine attacks
    - Rescue medication
    - Medications (non-steroidal anti-inflammatory drugs [NSAIDs] and acetaminophen, triptans, triptan and NSAID combinations, antiemetics, dihydroergotamine, ergotamine, opioids, butalbital)
4. Pharmacological prophylactic therapy
    - Indications for migraine preventive medication
    - Medications (beta-blockers, antidepressants, antiepileptics, vitamins, minerals, herbals, candesartan, pizotifen, flunarizine, onabotulinumtoxinA, NSAIDs, verapamil)
5. Non-pharmacological therapy
    - Relaxation training, biofeedback, cognitive behavioural therapy (CBT)
    - Acupuncture
    - Homeopathy
    - Hyperbaric and normobaric oxygen

- Acrylic splints
- Hypnotherapies
- Massage
- Spinal manipulation
- Transcutaneous electrical nerve stimulation (TENS)

6. Management of menstrual migraine and migraine in pregnancy (acute medications and prophylactic treatment)

Management of TTH

1. Acute pharmacological therapy (NSAIDs and acetaminophen, combination analgesics, muscle relaxants, opiates, triptans)
2. Pharmacological prophylactic therapy (amitriptyline, mirtazapine and venlafaxine, onabotulinumtoxinA)
3. Non-pharmacological therapy (CBT, biofeedback and relaxation training, exercise, physical therapy and acupuncture, hypnotherapy, massage, TENS)
4. TTH treatment in pregnancy (acute medications and prophylactic treatment)

Management of Medication Overuse Headache

1. Prevention and general approach to management
2. Treatment plans
3. Headache prophylaxis
4. Stopping medication overuse

Management of Cluster Headache

1. General approach to management
2. Acute therapy: triptans, oxygen therapy
3. Pharmacological prophylactic therapy: verapamil, prednisone, lithium, melatonin, topiramate

Management of Other Headache Disorders

1. Management of hemicrania continua: referral and pharmacological therapy (indomethacin)
2. Management of cervicogenic headache: referral, therapeutic exercise, cervical spinal manipulation, cervical spine mobilization
3. Management of headache secondary to temporomandibular disorders: referral, therapeutic exercise

Major Outcomes Considered

- Diagnostic accuracy of various imaging techniques including computed tomography (CT) and magnetic resonance imaging (MRI)
- Headache associated symptoms (nausea, vomiting, photophobia, phonophobia, conjunctival injection, or rhinorrhea)
- Clinical response to treatment (e.g., pain free, headache response, headache recurrence, relief of migraine-associated symptoms, medication tolerance, resumption of normal activity, frequency of acute medication use, adverse effects)
- Adverse effects of medications

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Identifying Seed Guidelines

Inclusion Criteria

Guidelines

Guidelines ("seed" guidelines) were included if they focused on the diagnosis, conservative nonsurgical treatment, or prevention of primary headache and were designed for use in primary healthcare settings by physicians, physical therapists, chiropractors, occupational therapists, nurses, community-based nurses, pharmacists, mental health professionals, and other healthcare providers who treat patients with headache.

Only clinical practice guideline (CPGs) formulated in countries with developed market economies were included since the health status, cultural norms, access to health care, and disease burden of individuals from countries with transitional or developing economies were likely to be too different from those in Canada to be clinically relevant. Countries deemed to have developed economies, as defined by the United Nations, were Australia, Canada, Japan, New Zealand, the United States of America, and European countries (except for those with transition economies).

Patient Group

Patients included individuals aged 18 years or older. Guidelines that referred to adult patients or focused on headache in pregnant women without providing a specific age range were also included on the basis that the majority of the populations in these guidelines were likely to be at least 18 years of age.

Condition

For guidelines on treatment and diagnosis, only those that used the diagnostic criteria developed by the International Headache Society were included.

Guidelines were included if they dealt with the prevention, diagnosis and investigation, and treatment of primary headache that is not related to or caused by another disorder. These headache types include migraine, tension-type, and cluster headache as well as other primary headaches (thunderclap headache, hemicranias continua, new daily-persistent headache). Other trigeminal autonomic cephalalgias, such as chronic paroxysmal hemicranias and short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) or cranial autonomic features (SUNA), were excluded because of their low incidence.

Guidelines on medication-overuse headache (secondary headache) were also included because this headache type is typically present in a subgroup of patients with primary headache who have over-medicated. Cervicogenic headaches (secondary headache) were also included because a significant number of patients present to primary care physicians with this malady. Headache related with temporomandibular disorder is briefly discussed. However, other secondary headaches related to a causative disorder, such as trauma or infection, were excluded.

Exclusion Criteria

Guidelines were excluded that focused on diagnostic techniques, interventions, or treatments applied in the emergency department or inpatient setting (for example, surgical treatments).

Also excluded were guidelines focused on children or adolescents, or patients with specific causes for headache, such as head or neck trauma (except for cervicogenic headache), cranial or cervical vascular disorders, non-vascular intracranial disorders (for example, neoplasm or idiopathic intracranial hypertension), use of a substance or its withdrawal (except for secondary medication-overuse headache), temporomandibular joint disorder, infection, disorders of homeostasis, psychiatric disorders, or disorders or lesions of the cranium, neck, eyes, ears, nose, sinuses, teeth, mouth, or other facial or cranial structures.

Literature Search Strategies

A preliminary systematic literature search was conducted to identify relevant guidelines published in English between January 2000 and April 2006. The search was further refined and updates were conducted in April 2009, October 2009, August 2010, and May 2011 (Table 1 in the background document [see the "Availability of Companion Documents" field]). The date restriction was applied to ensure the guidelines collected were current and clinically relevant.

Medical Subject Headings (MeSH) relevant to this topic are: headache; Headache disorders.

In some cases, Guideline Development Group (GDG) members requested additional research evidence to finalize some of the Alberta CPG recommendations, so primary studies cited in the seed guidelines in support of their recommendations were retrieved for closer examination. For some of these recommendations, a database of systematic reviews on headache disorders (known as the Institute of Health Economics [IHE] database), which was created for the Ambassador Project in 2006, was searched for systematic reviews published in English between January 2000 and October 2010. The IHE database was updated in January 2007, May 2007, March 2009, November 2009, March 2010, and October 2010. The search strategy for the systematic reviews in this database is outlined in Table 2 in the background document (see the

"Availability of Companion Documents" field).

New Interventions and Recommendations

The IHE database was searched to identify recently published systematic reviews of new interventions that were considered important by the GDG, but that were not covered in the seed guidelines. These included duloxetine and desvenlafaxine for migraine prophylaxis. Occasionally, new recommendations were generated when the GDG members requested and reviewed additional research evidence. In some cases, the IHE database was searched for systematic reviews on these particular interventions, which included normobaric oxygen for migraine and exercise for migraine, tension-type, and cervicogenic headache (see Appendix H in the background document [see the "Availability of Companion Documents" field]).

Selecting the Seed Guidelines

The initial selection of guidelines was made by one reviewer and double-checked by a second reviewer. Guidelines were excluded that, on the basis of their abstract, clearly did not meet the inclusion criteria. Copies of the full text of potentially eligible guidelines were retrieved. In some cases, closer examination of the full text revealed that the guideline did not meet the inclusion criteria. Consequently, these papers were excluded (see Appendix C in the background document [see the "Availability of Companion Documents" field]). When a single guideline development group had published more than one guideline, only the most recent version was used. From the 64 relevant guidelines identified by the search strategy, the IHE Research Team, in consultation with one GDG co-chair, compiled a final shortlist of 18 potential seed guidelines.

Number of Source Documents

Six seed guidelines

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Critically Appraising the Seed Guidelines

The included guidelines were assessed with respect to various aspects of methodology and reporting using the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument. Although a new edition of the tool, AGREE tool (II), was published in May 2009, to maintain consistency and continuity in the guideline appraisal process, the Research Team decided to continue using the original AGREE tool that had been used in the first and second editions of another Alberta Clinical Practice Guideline (CPG) on low back pain.

The AGREE instrument is an internationally developed, generic tool that is validated, transparent, and widely accepted, with satisfactory reliability for most domains. The instrument has 23 key items organized into six domains. The Research Team modified the AGREE tool to reduce the ambiguity and subjectivity associated with item scoring, and to enable the differentiation of good quality guidelines from poor quality guidelines. A detailed discussion of the modifications can be found in the background document (see the "Availability of Companion Documents" field).

Seed guideline quality assessments were undertaken independently by two reviewers who discussed the modified AGREE dictionary with respect to the interpretation of questions prior to assessing the guidelines. Reviewers discussed any items where the scores differed by at least two points to minimize coding bias.

Extracting Data

Two reviewers extracted guideline information into standardized evidence inventory tables that were developed a priori. However, duplicate data extraction and cross-checking were not performed. The evidence inventory tables included:

- Guideline profile information (title, country, intervention category: for example, diagnosis, prophylaxis, pharmaceutical and non-pharmaceutical treatment)
- A synopsis of the recommendations
- A list of the number and types of studies referenced by the guideline to support its recommendations

Discordant recommendations among guidelines were highlighted within the table. After consultation with the SC, the strength of the recommendations, as stated by the seed guidelines, was added to the evidence inventory tables for recommendations on tension-type, cluster, and medication-overuse headache.

Additional research evidence and information was required, particularly when recommendations were overlapping, discordant, or absent. These supplementary requests by the Guideline Development Group (GDG), named "parking lot" items, necessitated examination of the individual studies cited by the seed guideline(s) or examination of other research evidence, that is, systematic reviews on headache identified by a supplementary search of literature (Institute of Health [IHE] Database) published between January 2000 and October 2010 (see Table 2 in the background document [see the "Availability of Companion Documents" field]). An article was deemed to be a systematic review if it met all of the following criteria:

- Focused clinical question
- Explicit search strategy
- Use of explicit, reproducible, and uniformly applied criteria for article selection
- Critical appraisal of the included studies
- Qualitative or quantitative data synthesis

Only systematic reviews that focused on the diagnosis, nonsurgical treatment, or prevention of primary headache among adults in the primary care setting were considered. When no systematic review was available for a specific intervention, information was considered from the most recent quasi-systematic review (defined as a review that did not critically appraise the included studies) or narrative review listed in the systematic review database.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The Guideline Development Group (GDG) reviewed all the documents for the seed guidelines (the guidelines plus their companion documents, evidence inventory tables, and AGREE scores) and engaged in deliberations during 13 half-day meetings (one face-to-face and 12 web conferences) over a 23-month period. The agenda and all documents were provided in advance and participants had the option of joining in via telephone if an Internet connection was not available. Two experienced co-chairs guided all the meetings. Roundtables were conducted during each meeting to ensure that all participants had a voice in the proceedings and that process reviews were instigated at strategic points throughout. Each of the topic areas (diagnosis and investigation, interventions for migraine, tension-type headache, cluster headache, and medication-overuse headache) were addressed in a sequential fashion to ensure there were separate discussions on the formulation of recommendations for each.

In many cases, one co-chair (a neurologist with expertise in headache management) created "straw dog" recommendations, based on the seed guideline recommendations, prior to the GDG discussions. These, along with the relevant evidence inventory tables, were then reviewed at the GDG meeting. After GDG meetings, the same co-chair refined or reworded recommendations based on the feedback received from participants. This additional work by the co-chair served to focus discussion and promote consensus on recommendation wording. The red flags and referral recommendations were reviewed by two external experts, one with expertise in emergency medicine and the other with an expertise in ophthalmology. Input on the recommendations for diagnosis and neuroimaging was also obtained from two external radiology experts. All final decisions were made by consensus (see Appendix B of the background document for a flow diagram of the guideline development process [see the "Availability of Companion Documents" field]).

Additional evidence was required when there were uncertainties or disagreements arose regarding interpretation of the evidence from the seed

guidelines or when new interventions were considered that had not been included in the seed guidelines. These contentious items were referred for further analysis to ad hoc GDG subcommittees comprising one or both GDG co-chairs, one health technology assessment (HTA) researcher, and at least one volunteer from the GDG with expertise in the relevant area (see Figure 1 in the background document [see the "Availability of Companion Documents" field]). When necessary, additional information was provided from individual studies cited by the seed guidelines or from systematic reviews listed in a regularly updated database of reviews on headache disorders (Institute of Health Economics [IHE] Database). All of the consensus-based subcommittee decisions were presented to the GDG for final approval.

Rationale and Process for Developing Recommendations

Each recommendation from the Alberta clinical practice guideline (CPG) was sourced from one or multiple seed guidelines and was accepted, supplemented, or changed as follows:

- Accepted or accepted with minor modification (for example, wording)
- Accepted but supplemented with expert opinion
- Additional information retrieved/considered, specifically:
    - Original recommendation accepted/changed based only on studies included in seed guidelines
    - Original recommendation accepted/changed based on additional evidence from systematic review literature search
    - Additional evidence supplemented with expert opinion

Thus, each recommendation in the Alberta CPG came from one or more seed guideline(s), was based on evidence from systematic or quasi-systematic reviews, or was created by the GDG, based on their collective professional opinion and an analysis of relevant evidence.

Rating Scheme for the Strength of the Recommendations

Summary of Criteria to Determine the Categorization of Recommendations

Do	• The Guideline Development Group (GDG) accepted the original recommendation, which provided a prescriptive direction to perform the action or used the term "effective" to describe it. • The GDG supplemented a recommendation or created a new one, based on their collective professional opinion, and/or systematic reviews which supported the action.
Do Not Do	• The GDG accepted the original recommendation, which provided a prescriptive direction not to perform the action; used the term "ineffective" to describe it; or stated that the evidence does "not support" it. • The GDG supplemented a recommendation or created a new one, based on their collective professional opinion and/or systematic reviews, which did not support the action.
Do Not Know	• The GDG accepted the original recommendation, which did not recommend for or against the action or stated that there was "no evidence," "insufficient or conflicting evidence," or "no good evidence" to support its use. • The GDG supplemented a recommendation or created a new one, based on their collective professional opinion and/or systematic reviews, which was equivocal with respect to supporting the action.

Cost Analysis

Economic Information Reported in the Seed Guidelines

Formal economic evaluations or cost analyses were not included in any of the seed guidelines, nor did they discuss the economic implications of their recommendations.

The following general statements on economic aspects were made by the seed guidelines (see the "Major Recommendations" field to identify the seed guidelines).

- Management decisions on the use of preventive therapies should be guided by considerations of the recurrence and frequency of headaches, the contraindications and adverse events associated with treatment, the patient's preferences, the presence of uncommon migraine conditions, and the cost of both acute and preventive therapies (G1).
- One of the goals of acute migraine treatment is to be cost-effective for overall management. Consideration of patient preference (formulations, cost, dosing schedules, and tolerability) was also listed among the general consensus-based principles of care (G1).

- Patient reassurance. Patients with high scores on the hospital anxiety and depression scale who did not receive a scan had significantly higher health service costs overall due to a greater use of headache resources such as psychiatric and psychology services than did comparable patients who received a scan (one publication, cited in G4).

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Reviewing the Alberta Clinical Practice Guideline (CPG)

The Alberta Guideline for Primary Care Management of Headache in Adults (quick reference algorithm and medication tables, main guideline, and companion documents) was reviewed by various stakeholders:

- Family physicians with experience and interest in headache management and members of the Guideline Development Group (GDG) reviewed the quick reference algorithm and medication tables, main guideline, and companion documents
- Lay people and patients with headache conditions reviewed the patient information sheets

The Steering Committee (SC) and Research Team collated all feedback and incorporated it, where possible, into the Alberta CPG. All changes were subsequently presented to the GDG (see Appendix M of the background document for a summary of the feedback received [see the "Availability of Companion Documents" field]).

Endorsement

The Alberta Guideline for Primary Care Management of Headache in Adults has been endorsed by the Toward Optimized Practice (TOP) program, which is funded under the Master Agreement between the Alberta Medical Association (AMA), Alberta Health Services, and Alberta Health. TOP is administered by the AMA.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified for each recommendation (see the "Major Recommendations" field).

The Evidence Source provides information on the "seed" guideline(s) that were used to develop the Alberta guideline recommendations and the design of the studies referenced by the "seed" guideline(s) in support of their recommendations. The following evidence sources were considered:

- Systematic review (SR): as cited by the "seed" guideline(s) or identified from a supplementary literature search (Institute of Health Economics [IHE] Database) required by the Ambassador Guideline Development Group (GDG). The literature search for relevant guidelines spanned from January 2000 until May 2011 while the literature search for published systematic reviews spanned from January 2000 to October 2010. A review which does not include a critical appraisal of the included studies is considered a quasi-systematic review (qSR).
- Randomized controlled trial (RCT): as cited by the "seed" guideline(s).
- Non-randomized comparative study (NRCS): non-randomized trial with concurrent or historical controls, case-control study, or a study of the sensitivity and specificity of a diagnostic test as cited by the "seed" guideline(s).
- Case series (CS): cross-sectional study, case series study, or case report as cited by the "seed" guideline(s).
- Guideline (G): as cited by the "seed" guideline(s).
- Narrative review (NR): narrative review, or consensus statement or report as cited by the "seed" guideline(s).
- Expert opinion (EO) as cited by the "seed" guideline(s): when no evidence was provided by the "seed" guideline in support of the recommendation.
- EO (GDG): after examining other references nominated by the GDG members (i.e., SRs, NR, RCTs, Gs) or when no evidence from SRs

was found on an intervention, a new recommendation was drafted based on the collective EO of the Ambassador GDG.

For evidence cited by the "seed" guideline(s), only the highest level of evidence was listed. For example, when the evidence cited by a "seed" guideline(s) was from SRs and studies of other design (i.e., qSR, RCT, NRCS, CS, G, or NR) only SR is listed as the source. When no SR was referenced in the "seed" guideline, the evidence source was indicated in the following order: qSR, RCT, NRCS, CS, G, NR, EO. The same classification for the evidence source was applied when multiple "seed" guidelines were used to inform one recommendation.

Each recommendation in the Alberta guideline came from one or more "seed" guideline(s) or SRs/qSRs (IHE Database) or was created by the GDG, based on their collective professional opinion and an analysis of relevant evidence.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

It is expected that providing relevant, up-to-date information to assist primary care practitioners in the prevention, diagnosis, evaluation, management, and treatment of headache will allow more patients to be competently managed in the primary care setting and decrease unnecessary referrals to increasingly overburdened specialists.

Potential Harms

- Clinicians requesting neuroimaging should be aware that any imaging study, particularly magnetic resonance imaging (MRI), can identify incidental findings which may or may not correlate with clinical findings, and which may cause unnecessary patient anxiety.
- Side effects and other potential harms of medications are listed in italics in the "Major Recommendations" field. Appendix A in the original guideline document also lists adverse side effects of medications used for migraine headache.

Contraindications

Contraindications

- Some migraine preventive drugs are contraindicated by co-existent disorders (e.g., flunarizine in depression).
- Amitriptyline is contraindicated in patients with angle-closure glaucoma.
- Triptans are vasoconstrictors and should not be used in patients with cerebrovascular or cardiovascular disease.
- The use of butalbital-containing combination analgesics in migraine management should be avoided and limited to exceptional circumstances where other acute medications are contraindicated and/or ineffective.
- Beta-blockers should be avoided or used with caution in patients with asthma, diabetes, bradycardia, and peripheral vascular disease.
- Topiramate should be avoided in pregnant patients or those with angle-closure glaucoma. It should also be avoided or used with caution in patients with a history of renal calculi.
- Divalproex sodium should not be taken by women who are pregnant or of child bearing potential or by patients with liver disease.
- Because of potential effects on the fetus, the use of migraine and tension-type headache (TTH) prophylactic drugs during pregnancy should be avoided, where possible.
- All non-steroidal anti-inflammatory drugs (NSAIDs), including ibuprofen, should be avoided in the third trimester of pregnancy.
- Ergot alkaloids should not be used during pregnancy or in patients with cerebrovascular or cardiovascular disease.
- Sumatriptan should not be used routinely in pregnancy, but may be considered for use when other medications have failed and the benefits outweigh the risks.
- Use of ibuprofen, acetylsalicylic acid, acetaminophen, and naproxen on 15 days a month or more for the management of TTH should be avoided.

Appendix A in the original guideline document lists additional contraindications and cautions of medications used for headache treatment.

Qualifying Statements

Qualifying Statements

- These recommendations are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances. They should be used as an adjunct to sound clinical decision making.
- It is recognized that not all recommended treatment options are available in all communities.

Implementation of the Guideline

Description of Implementation Strategy

Dissemination and Implementation Plan

The Alberta Clinical Practice Guideline (CPG) for Primary Care Management of Headache in Adults dissemination plan includes five main strategies to manage barriers.

1. Develop patient support materials (information sheets, website).
2. Involve partners:
    a. Toward Optimized Practice (TOP) to launch guideline.
    b. Guideline Development Group (GDG) to champion the CPG in their regions/zones.
    c. Advisory Committee members to champion through their organizations.
3. Facilitate access to the Alberta CPG on the TOP website from provincial, national, and international associations and organizations.
4. Contact and connect with important stakeholders such as Alberta Health, Alberta Health Services, and the primary care networks.
5. Promote the CPG to professionals through different channels such as workshops, teaching support for continuing medical education (CME) in faculties of medicine (Calgary and Edmonton), rural CME sessions, videoconferences, webinars, participation at conferences and other professional meetings, and publication in professional newsletters and peer-reviewed Canadian and international journals.

A repository document was created for logging the knowledge translation activities conducted before and after the launch of the Alberta CPG. The document, which is continuously updated, includes information on the type of activity (what, who, when, where), its objective, the intended audience, and any evaluation or feedback received.

Implementation Tools

Clinical Algorithm

Patient Resources

Quick Reference Guides/Physician Guides

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Toward Optimized Practice. Guideline for primary care management of headache in adults. Edmonton (AB): Toward Optimized Practice; 2012 Jul. 71 p. [28 references]

Adaptation

The following "seed" guidelines were used to develop the guideline recommendations. The guidelines are not presented in any specific order. G1, G2, etc., are randomly assigned and for the purposes of organization only.

G1 USA	Frishberg BM, Rosenberg JH, Matchar DB, McCrory DC, Pietrzak MP, et al. Evidence based guidelines in the primary care setting: neuroimaging in patients with non-acute headache. St Paul, MN: US Headache Consortium; 2000. Available from: http://tools.aan.com/professionals/practice/pdfs/gl0088.pdf (accessed July 3, 2012). Matchar DB, Young WB, Rosenberg JH, Pietrzak MP, Silberstein SD, et al. Evidence-based guidelines for migraine headache in the primary care setting: pharmacological management of acute attacks. St Paul, MN: US Headache Consortium; 2000. Available from: http://tools.aan.com/professionals/practice/pdfs/gl0087.pdf (accessed July 3, 2012). Ramadan NM, Silberstein SD, Freitag FG, Gilbert TT, Frishberg BM. Evidence-based guidelines for migraine headache in the primary care setting: pharmacological management for prevention of migraine. St Paul, MN: US Headache Consortium; 2000. Available from: ttp://tools.aan.com/professionals/practice/pdfs/gl0090.pdf (accessed July 3, 2012). Campbell JK, Penzien DB, Wall EM. Evidence-based guidelines for migraine headache: behavioral and physical treatments. St Paul, MN: US Headache Consortium; 2000. Available from: http://tools.aan.com/professionals/practice/pdfs/gl0089.pdf (accessed July 3, 2012).
G2 Europe	Evers S, Afra J, Frese A, Goadsby PJ, Linde M, May A, et al. EFNS guideline on the drug treatment of migraine - revised report of an EFNS task force. European Journal of Neurology 2009;16(9):968-81.
G3 France	Géraud G, Lantéri-Minet M, Lucas C, Valade D. French Society for the Study of Migraine Headache (SFEMC). French guidelines for the diagnosis and management of migraine in adults and children. Clinical Therapeutics 2004;26(8):1305-18.
G4 UK	Scottish Intercollegiate Guidelines Network (SIGN). Diagnosis and management of headache in adults. A national clinical guideline. SIGN Publication No. 107. Edinburgh: SIGN; 2008. Available from: http://www.sign.ac.uk/guidelines/fulltext/107/index.html (accessed July 3, 2012).
G5 Europe	May A, Leone M, Afra J, Linde M, Sandor PS, Evers S, et al. EFNS guidelines on the treatment of cluster headache and other trigeminal-autonomic cephalalgias. European Journal of Neurology 2006;13(10):1066-77.
G6 Europe	Bendtsen L, Evers S, Linde M, Mitsikostas DD, Sandrini G, Schoenen J. EFNS guideline on the treatment of tension-type headache - Report of an EFNS task force. European Journal of Neurology 2010;17(11):1318-25.

Date Released

2012 Jul

Guideline Developer(s)

Institute of Health Economics - Nonprofit Research Organization

Toward Optimized Practice - State/Local Government Agency [Non-U.S.]

Source(s) of Funding

Alberta's Health Technology Assessment (HTA) program was established under the Health Research Collaboration Agreement between the Institute of Health Economics and the Alberta Health Ministry. Funding for this initiative was provided by Alberta Health.

Alberta Health Services, Calgary Zone provided clinical leadership and an in-kind contribution.

The above-mentioned funders had no influence on the recommendations contained in the final Alberta Clinical Practice Guideline.

Guideline Committee

Guideline Development Group (GDG)

Composition of Group That Authored the Guideline

Guideline Development Group (GDG) Members: Werner Becker MD, BSc, FRCP(C) (*Co-chair*) Professor, Department of Clinical Neurosciences; University of Calgary; Paul Taenzer BSc, PhD, RPsych (*Co-chair*) Adjunct Clinical Assistant Professor, Faculty of Medicine University of Calgary Psychology, pain management

For details on the affiliation, discipline, and area of expertise of the GDG members, see Appendix A in the guideline background document (see the "Availability of Companion Documents" field).

Financial Disclosures/Conflicts of Interest

All Guideline Development Group (GDG), Steering Committee (SC), and Research Team members completed a declaration of competing interest using a standard form (see Appendix N in the background document [see the "Availability of Companion Documents" field]). Competing interest was defined as being financial or nonfinancial interest, either direct or indirect, that could affect the recommendations contained in the Alberta Clinical Practice Guideline (CPGs).

Four members of the GDG declared competing interests (see Appendix N in the background document). However, the collaborative nature of the CPG development process, which involved a large (n=21), multidisciplinary GDG led by two co-chairs, ensured that these interests had no influence on the design, data analysis, formulation, or content of the guideline.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Toward Optimized Practice (TOP) Web site .

Availability of Companion Documents

The following are available:

- Ambassador Program guideline for management of primary headache in adults: background document. Edmonton (AB): Institute of Health

Economics; 2013 Aug. 285 p. Electronic copies: Available in Portable Document Format (PDF) from the Institute of Health Economics (IHE) Web site.

- Quick reference: algorithm and medication table. Edmonton (AB): Toward Optimized Practice; 2012 Jul. 2 p. Electronic copies: Available in PDF from the Toward Optimized Practice (TOP) Web site.
- Summary guideline for management of primary headache in adults. Edmonton (AB): Toward Optimized Practice; 2012 Jul. 8 p. Electronic copies: Available in PDF from the TOP Web site.
- Headache diary sheet. Edmonton (AB): Institute of Health Economics; 2013. 2 p. Electronic copies: Available in PDF from the IHE Web site.
- Temporomandibular and neck exam. Instructional video for clinicians. Available from the IHE Web site.
- Headache disability measurement tools: Headache Impact Test (HIT-6) and Migraine Disability Assessment Scale (MIDAS). Available from the IHE Web site.
- Canadian guideline for safe and effective use of opioids for chronic non-cancer pain. Hamilton (ON): National Opioid Use Guideline Group (NOUGG). 2010. Electronic copies: Available in PDF from the TOP Web site.

Patient Resources

The following are available:

- What you should know about headache. Patient handout. Edmonton (AB): Institute of Health Economics; 2013. 1 p. Electronic copies: Available in Portable Document Format (PDF) from the Institute of Health Economics (IHE) Web site.
- What you should know about headache self-management. Patient handout. Edmonton (AB): Institute of Health Economics; 2013. 2 p. Electronic copies: Available in PDF from the IHE Web site.
- What you should know about medication-overuse headache. Patient handout. Edmonton (AB): Institute of Health Economics; 2013. 1 p. Electronic copies: Available in PDF from the IHE Web site.
- What you should know about migraine headache. Patient handout. Edmonton (AB): Institute of Health Economics; 2013. 2 p. Electronic copies: Available in PDF from the IHE Web site.
- What you should know about migraine preventive medications. Patient handout. Edmonton (AB): Institute of Health Economics; 2013. 1 p. Electronic copies: Available in PDF from the IHE Web site.
- What you should know about tension-type headache. Patient handout. Edmonton (AB): Institute of Health Economics; 2013. 1 p. Electronic copies: Available in PDF from the IHE Web site.
- Food triggers, caffeine and migraine attacks. Patient handout. Edmonton (AB): Institute of Health Economics; 2013. 2 p. Electronic copies: Available in PDF from the Toward Optimized Practice (TOP) Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

This NGC summary was completed by ECRI Institute on October 9, 2013. The information was verified by the guideline developer on November 12, 2013. This summary was updated by ECRI Institute on September 18, 2015 following the U.S. Food and Drug Administration advisory on non-aspirin nonsteroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI Institute on June 2, 2016 following the U.S. Food and Drug Administration advisory on Opioid pain medicines. This summary was updated by ECRI Institute on October 21, 2016 following the U.S. Food and Drug Administration advisory on opioid pain and cough medicines combined with benzodiazepines.

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